Evaluation Matrix

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Date: _8/29/2008__ MLRA: _42 _ Ecological Site: _ **Loamy Sand** (R042XD008NM)_ This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.
Composition (indicators 10 and 12) based on:_X _Annual Production, __Cover Produced During Current Year __Biomass

	Departure from Reference Sheet				
Indicator	**Extreme**	**Moderate to Extreme**	**Moderate**	**Slight to Moderate**	**None to Slight**
1. Rills*	Rill formation is severe and well defined throughout most of the site.	Rill formation is moderately active and well defined throughout most of the site.	Active rill formation is slight at infrequent intervals; mostly in exposed areas.	No recent formation of; old rills have blunted or muted features**.**	There should not be any rills.
2. Water Flow Patterns *	Water flow patterns extensive and numerous; unstable with active erosion; almost always (>75%) connected.	Water flow patterns more numerous and extensive than expected; deposition and cut areas common; usually (50-75%) connected.	Number and length of water flow patterns moderately exceed what is expected for the site; erosion is minor with some instability and deposition; often connected (+- 50%).	Number and length of water flow patterns nearly match what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short; occasionally (<25%) connected.	Large storms can produce few flow patterns that should be short (<3') and discontinuous.
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestaled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestaled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare, some evidence of past formation, especially in water flow patterns on exposed slopes.	: There can be very few pedestals and terracettes. If present, they should be very short (< ½") and pedestals should have no exposed roots.
4. Bare Ground	Much higher than expected for the site. Bare areas are large and almost always (>75%) connected.	Moderate to much higher than expected for the site. Bare areas are large and often (+-50%) connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are occasionally larger than expected and rarely connected.	Bare ground should be less than 15% following a wet year but can be as high as 30% following multiyear drought. Ground cover is based on first raindrop impact. Gaps should be short (2') except where small mammal disturbances occur.
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active**.**	Moderate in number to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; down-cutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon, vegetation is stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion**.**	None

6. Wind Scoured, Blowout and/or Depositional Areas	Extensive.	Common.	Occasionally present	Infrequent and few.	There should not be any wind scoured, blowouts and/or depositional areas.
7. Litter Movement (wind or water)	Extreme; concentrated around obstructions. Most size classes of litter have been displaced**.**	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions**.**	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	The small (grass) litter movement should be less than 3' across bare patches. Very little large litter movement expected for this site.
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Soil stability values should be 5-6 under plants and 4-5 in interspaces. (silt loams and loams)
9. Soil Surface Loss (especially in plant interspaces	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site (both interspaces and beneath plant canopies). Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces (soil structure is degraded and soil organic matter content is significantly reduced); only some degradation beneath plant canopies..	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Ft Bliss Soil Survey, Reyab—At least 4 inches thick; pale brown (10YR 6/3), dark brown (10YR 3/3) moist; fine granular in the upper part and weak medium and fine subangular blocky structure in the lower part; Salado—At least 5 inches thick; light brown (7.5YR 6/3) crushed, dark brown (7.5YR 3/3)moist; moderate fine granular structure over weak medium subangular blocky structure.
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration**.**	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Uniformly distributed grass patches should stop runoff and increase infiltration. Grass species in dominant and Subdominant groups promote infiltration with their extensive root systems and litter inputs (relative to burro grass) (Devine et al. 1998)
11. Compaction Layer (below soil surface)	Extensive and severely restricts water movement and root penetration.	Widespread and greatly restricts water movement and root penetration.	Moderately wide-spread and moderately restricts water movement and root penetration.	Rarely present or if common is thin and weakly restrictive to water movement and root penetration.	There should not be any compaction layers on this site.

12. Functional/ Structural Groups (F/SGroups)	Number of F/S groups greatly reduced AND/OR Relative dominance of F/S groups has been dramatically altered AND/OR Number of species within F/S groups dramatically reduced.	Number of F/S groups reduced AND/OR One dominant group and/or one or more sub-dominant group replaced by F/S groups not expected for the site or by a F/S group that should always remain in other AND/OR Number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced AND/OR One or more sub-dominant F/S groups replaced by F/S groups not expected for the site AND/OR Number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced AND/OR Relative dominance of F/S groups has been modified from that expected for the site AND/OR number of species within F/S slightly reduced.	Dominant: C4 perennial rhizomatous / stolonifeous grasses C4 grasses with dense rooting systems. (blue grama, black grama tobosa) Sub-dominant: C4 perennial' bunchgrasses (bluestem; muhly, dropseed, three awn, side oats grama). Other: annual forbs, Shrubs (not creosote or mesquite). Stoloniferous grasses with sparse root systems (burro grass).
13. Plant Mortality/ Decadence	Dead and/or decadent plants are very common.	Dead plants and/or decadent plants are common.	Moderately more plant mortality and/or decadence than expected	Slightly more plant mortality and/or decadence than expected.	Blue grama, Tobosa and other bunchgrasses can show decadence in centers of plants after multiyear drought.
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather**.**	Moderately more or less relative to site potential and weather.	Slightly more or less relative to site potential and weather.	Average 25-30% cover and 0.50 inch deep.
15. Annual Production	Less than 20% of potential production for the site based on recent weather.	20-40% of potential production for the site based on recent weather.	40-60% of potential production for the site based on recent weather.	60-80% of potential production for the site based on recent weather.	Favorable years: 1400 lbs/acre Normal: 1200 lbs/acre Unfavorable years: 800 lbs/acre
16. Invasive Plants	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily in disturbed areas within the site.	Creosote is the only known invader to this site. However mesquite has future potential. Mesquite is currently present in some disturbed areas. This indicator should be revised if any of these species become invasive in this ecological site.
17.Reproductivc Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is moderately reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is slightly reduced relative to recent climatic conditions**.**	Tobosa reproduces by seed sporadically but reproduction by rhizomes should be common. Blue grama should reproduce by seed and tiller most years. Burro grass should reproduce by seeds most years.

* Descriptions should be more specific than those listed in the General Example, if possible, and refer to the criteria included in the None to Slight description, which is based on the Reference Sheet. See page __ for an Reference Sheet example.